

What is claimed is:

1. A speech recognition method comprising the steps of(a) selecting, based on a first utterance by a speaker, adaptable trained patterns from a plurality of trained patterns, the plurality of stored trained patterns and  
5 classified by a characteristic of a training speaker;

(b) finding a distortion coefficient fixed by spectral region of speech for an utterance by the speaker, based on the first utterance by the speaker and the selected trained patterns; and

(c) recognizing an input speech sound following the first utterance by  
10 using the selected trained patterns and the distortion coefficient.

2. A speech recognition method according to claim 1 wherein the trained patterns are classified by ages of the training speakers.

3. A speech recognition method according to claim 1 wherein the  
15 trained patterns are classified by regions.

4. A speech recognition method according to claim 1, wherein the trained patterns comprise

(a) an average value of utterance for each characteristic  
20 category,

(b) a covariance value of the utterance for each characteristic category,

(c) an average value of each lexical unit by every speaker, and

25 (d) a covariance value of the utterance by every speaker.

5. A speech recognition method according to claim 2 wherein the trained patterns comprise

(a) an average value of utterance for each characteristic  
30 category,

(b) a covariance value of the utterance for each characteristic category,

(c) an average value of each lexical unit by every speaker, and

35 (d) a covariance value of the utterance by every speaker.

6. A speech recognition method according to claim 3 wherein the trained patterns comprise

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- (a) an average value of utterance for each characteristic category,  
(b) a covariance value of the utterance for each characteristic category,  
5 (c) an average value of each lexical unit by every speaker, and  
(d) a covariance value of the utterance by every speaker.

7. A speech recognition method according to claim 4, wherein the step (a) of selecting the adaptable trained patterns includes a distance calculation  
10 between the first utterance by the speaker and trained patterns,  
the trained patterns comprising  
(a) an average value of the utterance for each characteristic category,  
(b) the average of each lexical unit by every speaker, and  
15 (c) the covariance values of the utterance by every speaker.

8. A speech recognition method according to claim 5 wherein the step (a) of selecting the adaptable trained patterns includes a distance calculation  
between the first utterance by the speaker and trained patterns,  
20 the trained patterns comprising  
(a) an average value of the utterance for each characteristic category,  
(b) the average of each lexical unit by every speaker, and  
(c) the covariance values of the utterance by every speaker.

9. A speech recognition method according to claim 6 wherein the step (a) of selecting the adaptable trained patterns includes a distance calculation  
between the first utterance by the speaker and trained patterns,  
the trained patterns comprising  
30 (a) an average value of the utterance for each characteristic category,  
(b) the average of each lexical unit by every speaker, and  
(c) the covariance values of the utterance by every speaker.

- 35 10. A speech recognition method according to claim 7 further comprising a step of registering a vocabulary used for selecting the trained patterns.

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11. A speech recognition method according to claim 8 further comprising a step of registering a vocabulary used for selecting the trained patterns.

12. A speech recognition method according to claim 9 further comprising a step of registering a vocabulary used for selecting the trained patterns.

13. A speech recognition method according to claim 7 further comprising a step of resetting usage of the selected trained patterns and the determined distortion coefficient, and using a next input speech sound as a first utterance.

14. A speech recognition method according to claim 8 further comprising a step of resetting usage of the selected trained patterns and the determined distortion coefficient, and using a next input speech sound as a first utterance.

15. A speech recognition method according to claim 9 further comprising a step of resetting usage of the selected trained patterns and the determined distortion coefficient, and using a next input speech sound as a first utterance.

16. A speech recognition apparatus comprising:  
(a) an acoustic analysis unit for acoustically analyzing an input speech sound to find acoustic parameters;

(b) a pattern by-characteristic storage for previously holding a plurality of trained patterns classified by characteristic of a training speaker;

(c) a pattern by-characteristic selection unit for selecting adaptable trained patterns from the plurality of trained patterns based on a first utterance by a speaker;

(d) a speaker adaptation processor for finding a distortion coefficient fixed by spectral region of speech for acoustic parameters of the first utterance by the speaker using the acoustic parameters and the trained patterns selected by said pattern selection unit; and

(e) a word lexicon including known words to be recognized.